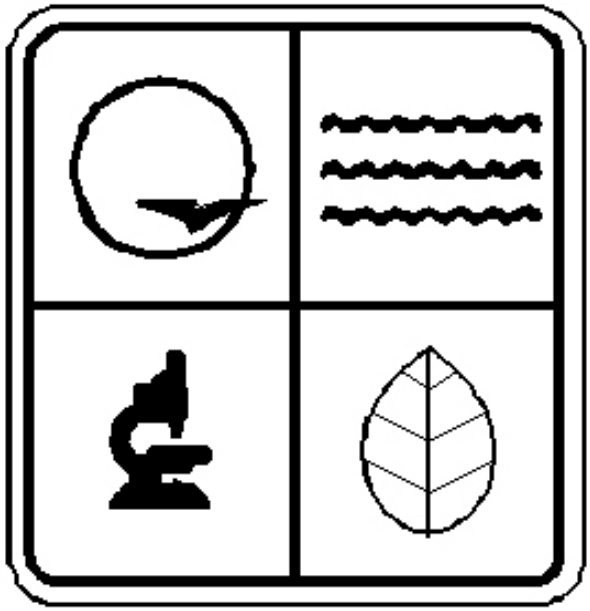
Pomona Baseline

EDM Calibration Baseline
Howell County, Missouri



Established by

Land Survey Program
Missouri Department of Natural Resources

1996

POMONA EDM CALIBRATION BASELINE

The EDM baseline is located at the West Plains Municipal Airport 1.5 miles NE of Pomona and 8.0 miles North of West Plains. To reach the baseline from the junction of Missouri Routes P, N and U.S. Highway 63 in the center of Pomona, go North on U.S. Highway 63 for 1.1 miles to the junction with Howell Road on right. Turn right and follow Howell Road for 0.3 mile to airport office. Airport manager is Jack Bowman and he is to be contacted prior to occupation to get the key to the gates. From the Airport office go west on Howell Road for 0.1 mile to T-intersection with Co. Rd. #1510 left. Turn left and follow Co. Rd. #1510 South for 0.75 mile to T-intersection with Missouri Route N. Turn left and follow Route N for 0.75 mile to intersection with Co. Road #1750 on left. Turn left and follow Co. Rd. #1750 for 0.75 mile to T-junction with Co. Road #2340 turn left and go 0.25 mile to a locked gate leading onto Airport property. Go through gate and follow road for 0.15 mile to a locked gate on right go through second gate and follow trail for 0.10 mile to runway and station Plainport (400 M) on left.

The baseline consists of four monuments. Station 0 M and 150 M are MO DNR aluminum disk set in 12" concrete monuments, set flush with the ground with punch marks. Station Plainport and Plainport Az. are stainless steel rods in sleeves accessed thru 5" PVC pipe with logo cap set flush with the ground with punch marks. The 0 M mark is 65' east of the east edge of runway, 146' south of the 7th runway light south of the crossover, 85' north of the 8th runway light south of the crossover, and 73.7' NW of the NW corner of a concrete ditch. The 150 M mark is 63.5' east of the east edge of the runway, 68.5' south of the 5th runway light south of the crossover, and 165.5' north of the 6th runway light south of the crossover. Plainport (400 M) is 97.8' east of the center of the runway, 105' NE of a runway light, 69.2' SE of a runway light and 1' west of a carsonite witness post. Plainport Az. Mark (1174 M) is 51.2' NE of the NE corner of the runway, 88.6' east of the center of the runway, and 40.7' east of the eastern most end of runway lights.

Prior to using the baseline contact:

Jack Bowman, Airport Manager
West Plains Municipal Airport
4523 County Road 2340
Pomona, MO 65789

417-257-1530 Airport
417-257-1539 Home
417-257-7888 Fax

The baseline station elevations are as follows:
0 meter - 372.359m
150 meter - 371.986m
400 meter - 371.698m
1175 meter - 372.454m

Electronic Distance Measuring (EDM) Calibration Baselines in Missouri

The Missouri Department of Natural Resources has established 12 Electronic Distance Measuring (EDM) calibration baselines in Missouri. Despite the fact that modern equipment is highly sophisticated and provides a direct readout of the distance to the nearest hundredth of a foot or millimeter at push of a button, it can also give an erroneous reading. The EDM baseline will allow the operator to verify that the instrument is in calibration and the instrument is being operated properly.

Each EDM baseline consist of 4 monumented stations. The monuments are spaced nominally at 0 meters, 150 meters, 400 meters and 1100 to 1375 meters. Each station will be occupied with the EDM equipment and a measurement made to the 3 other stations. This will give a total of 12 measurements. The results will determine the scale factor and a system constant for the EDM instrument.

The EDM operator should use the same procedures as in every day fieldwork. This will not only confirm that the equipment is in good working order, but will ensure the complete method of collecting data. The measuring system includes not only the instrument but the tripods, tribrachs, prisms, thermometers and barometers/altimeters as well.

WHEN TO CALIBRATE YOUR INSTRUMENT?

- Upon receipt of a new instrument
- Immediately after each servicing
- Anytime the operator feels the instrument is not working properly
- Before and after DNR or other government agency contracts

BEFORE RUNNING THE BASELINE PERFORM THE FOLLOWING

- Check and adjust optical plummets, bulls-eye bubbles and plumbing poles.
- Check thermometers and barometers/altimeters
- Make sure all tripods are rigid and stable
- Clean prisms
- Fully charge all batteries
- Have an EDM Calibration Report form for the baseline you are running.

When filling out the EDM Calibration Report form, fill in all lines that apply and add addition information if needed.

IMPORTANT NOTE

Before each measurement, enter the temperature and station pressure or absolute pressure into the instrument. The barometric pressure given over the radio and at airports has been reduced to sea level. DO NOT ENTER SEA LEVEL PRESSURE INTO THE EDM. One method used to find station pressure or absolute pressure is by elevation. The barometric pressure is reduced 0.1 inches of mercury for every 90 feet of elevation. So, to correct the sea level pressure obtained from the radio or airport, pick an average elevation for your area and divide by 90. Example: if the elevation is 1000 feet, dividing 1000 by 90 equals 11.11. Therefore, subtract 1.11 inches from the sea level pressure to obtain station pressure or absolute pressure.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY AND RESOURCE ASSESSMENT DIVISION

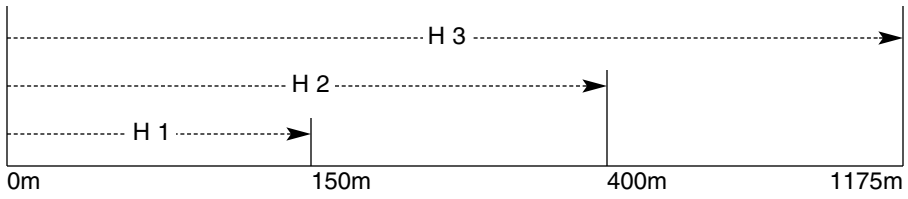
EDM CALIBRATION REPORT – POMONA EDM BASELINE (HORIZONTAL)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE AND MODEL

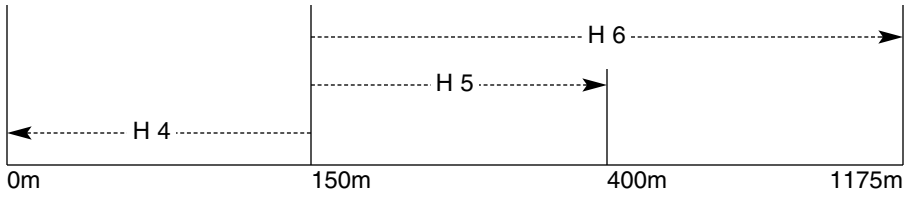
NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.

E.D.M. AT 0m



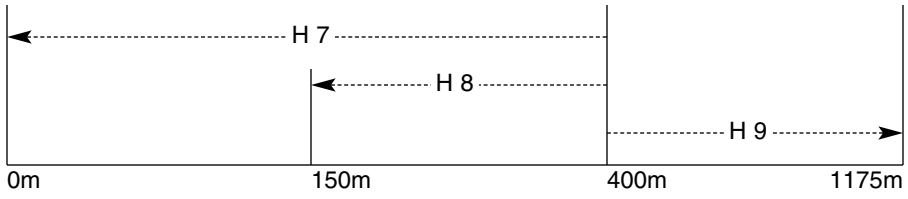
H 1 =	H 2 =	H 3 =	TEMP
H 1 = (149.9735m)	H 2 = (399.9722m)	H 3 = (1175.0458m)	*PRESS

E.D.M. AT 150m



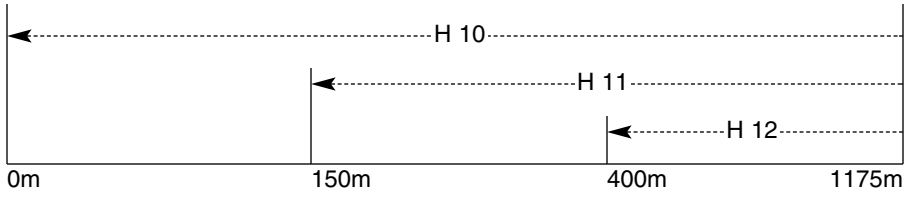
H 4 =	H 5 =	H 6 =	TEMP
H 4 = (149.9735m)	H 5 = (249.9987m)	H 6 = (1025.0723m)	*PRESS

E.D.M. AT 400m



H 7 =	H 8 =	H 9 =	TEMP
H 7 = (399.9722m)	H 8 = (249.9987m)	H 9 = (775.0736m)	*PRESS

E.D.M. AT 1175m



H 10 =	H 11 =	H 12 =	TEMP
H 10 = (1175.0458m)	H 11 = (1025.0723m)	H 12 = (775.0736m)	*PRESS

*Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY AND RESOURCE ASSESSMENT DIVISION

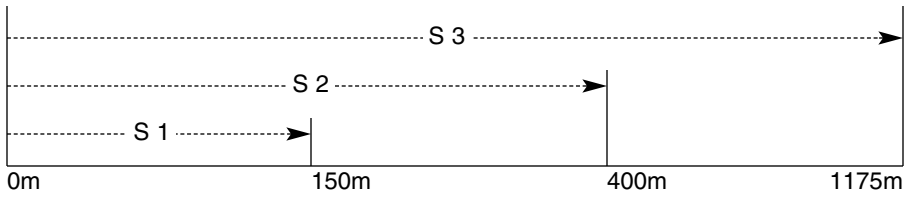
EDM CALIBRATION REPORT – POMONA EDM BASELINE (SLOPE)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE AND MODEL

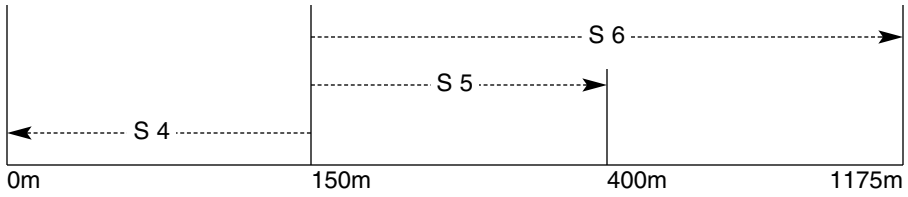
NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

E.D.M. AT 0m



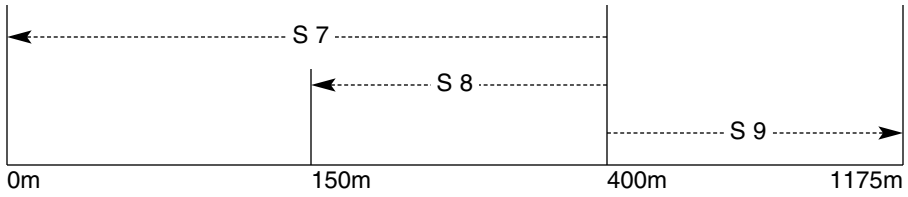
HI =	S 1 =	S 2 =	S 3 =	TEMP
	H 0 =	H 0 =	H 0 =	*PRESS

E.D.M. AT 150m



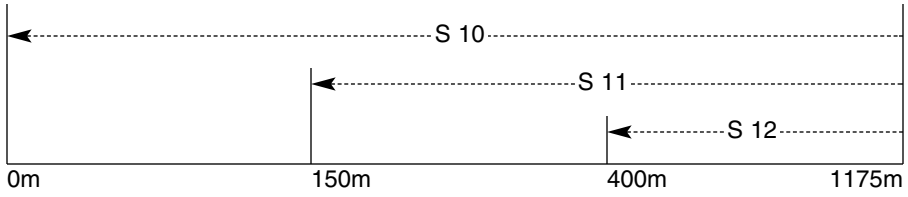
S 4 =	HI =	S 5 =	S 6 =	TEMP
H 0 =		H 0 =	H 0 =	*PRESS

E.D.M. AT 400m



S 7 =	S 8 =	HI =	S 9 =	TEMP
H 0 =	H 0 =		H 0 =	*PRESS

E.D.M. AT 1175m



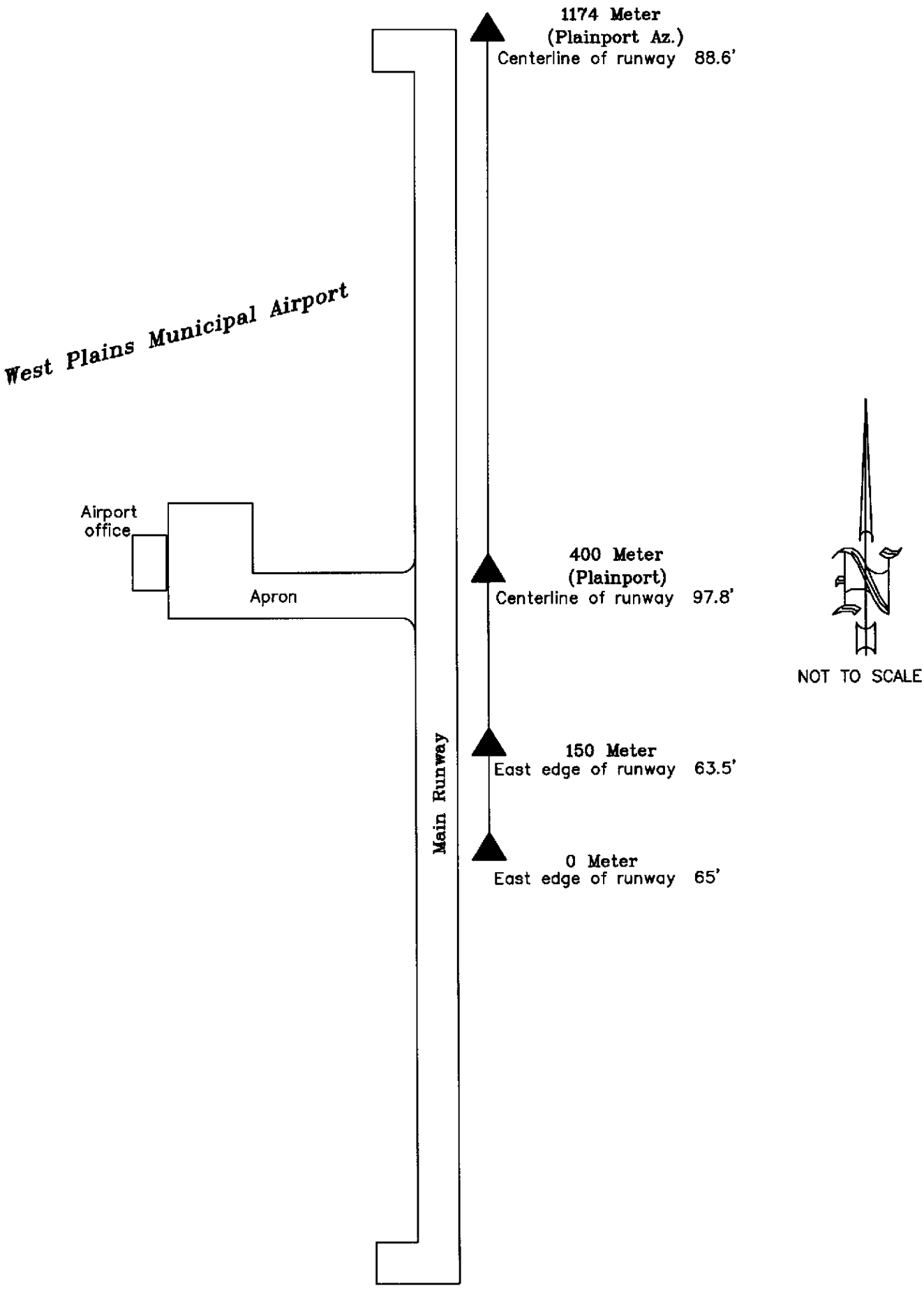
S 10 =	S 11 =	S 12 =	HI =	TEMP
H 0 =	H 0 =	H 0 =		*PRESS

Heights or delta elevations between monuments.

0m = 372.359m 150m = 371.986m 400m = 371.698m 1175m = 372.454m

*Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

Pomona Baseline



DATE OF SKETCH 2003